

Simple Soil Test for Emergence

While germination tests indicate the amount of seed that can germinate, an emergence test tells about the vigor of the seed and its ability to emerge in the field. Seed emergence is almost always lower than seed germination.

1. Obtain your Seed for Testing.

- **Subsample.** Take 3 to 5 handfuls of seed from different places within the seed you will plant. Combine this sampled seed to help ensure the sample is representative of all your seed.
- For small seed (like wheat), randomly select 2 lots of 100 seeds from the combined subsample. For larger seeds (like corn, peanuts, and soybeans) 2 lots of 50 seeds is enough.
Do not select seed – choose randomly.

2. Plant the seed.

- **Container.** While a clean shallow box or tray (approximately 30 cm square and 5 cm deep) is ideal (Figure at top), any container that can hold soil may be used. You can even use several containers if each is small (e.g., plastic bottles with the tops cut off). Poke holes in the bottom of the container to allow water to drain freely from the soil.
- **Soil.** Fill the tray with 3-5 cm loose soil. (If the drainage holes are too large, you can first lay a piece of paper inside the tray.)

- **Option.** If you do not have a tray or container, then just sow seeds in rows in the garden or in a corner of the field.

- **Planting.** Plant 10 rows of 10 seeds at an appropriate seeding depth for the crop (e.g., 2-4 cm for wheat). Place the seeds on top of the soil and push them in to the soil. Make sure the seed is covered by loose soil.

Note. Planting the seeds in rows makes it easier to count the emerging seedlings. A general rule of thumb is that seed should be planted to a depth twice its length. Thus, smaller seed is planted shallower than larger seed.

- **Water.** Gently water seed and keep the soil moist (not wet). If too dry, the seed will not absorb moisture and germinate. Overwatering can cause seeds to rot. You can cover the container to limit moisture loss from the soil, but be careful seed doesn't rot. Check the soil daily and water if necessary.

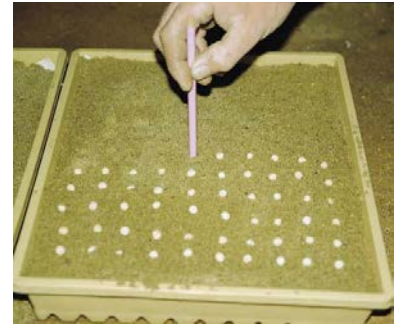
3. Count Emerging Seed.

- **Count.** After about 5-7 days (for wheat), count the number of normal healthy seedlings that have emerged. Do not count badly diseased, discolored or distorted seedlings. Do not wait until the late ones emerge as these are the damaged and weak ones.
- **Time required.** The number of days needed to emerge depends on the crop.

4. Estimate Percent Emergence.

- If you started with 100 seeds, the number of emerging seedlings counted gives the percentage emergence.
- The higher the emergence the healthier your seed sample.

Reference: Germination Testing and Seed Rate Calculation, Pulse Point 20, Grains Research & Development Council, NSW Department of Primary Industries.



Planting the seed – evenly spaced and at a good depth.
Photo: DI Holding



Healthy seed on left
Photo: Richter